PATENT
Attorney Docket No.: 021706-000800US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Confirmation No. 5826
Tony Wai-Chiu So *et al.*	Examiner: Sharmila S. Gollamudi
Application No.: 09/673,872	Technology Center/Art Unit: 1616
Filed: December 4, 2000	APPELLANTS' BRIEF UNDER 37 CFR § 41.37
For: PHARMACEUTICAL COMPOSITION	
Customer No.: 20350	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Appellants offer this Appeal Brief pursuant to 37 C.F.R. § 41.37 in furtherance of the Notice of Appeal filed on October 17, 2005, received by the Office on October 20, 2005. A Petition for a two-month extension of time accompanies this Appeal Brief. As February 20, 2006 was a Federal Holiday, Appellants believe that the Appeal Brief is timely as being filed on the next business date. Also submitted with this Appeal Brief is authorization to pay the fee as set forth in 37 C.F.R. § 41.20(b)(2).

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I. REAL PARTY IN INTEREST

The real party in interest is Connetics Australia Pty Ltd., the assignee of record.

II. RELATED APPEALS AND INTERFERENCES

No other appeals, proceedings, or interferences are known to Appellants which may be related to, directly affect or be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-25 were originally presented in the application. Claims 5, 7, 18, 22, and 25 have been canceled without prejudice. Claims 1-4, 6, 8-17, 19-21, and 23-24 have been rejected and are the subject of this appeal. No other claims are pending.

IV. STATUS OF AMENDMENTS

In an Advisory Action dated November 16, 2005, the Examiner indicated that the amendment filed in response to the final Office Action dated May 16, 2005 would be entered, but the 2004 Declaration of Mr. Albert Zorko Abram would not be entered. The Examiner also stated that some Japanese references listed in an earlier Information Disclosure Statement, and re-submitted with the response have not been considered.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention relates to a pharmaceutical composition for topical administration of at least 5% by weight of minoxidil or a pharmaceutically acceptable salt thereof and a method for the treatment of hair loss and related indications in humans. The present invention is based on the surprising discovery that the solubility of piperidinopyrimidine derivatives such as minoxidil can be significantly increased without using large amounts of propylene glycol by adjusting the acid concentration of the composition (Specification, page 2, lines 15-18).

More particularly, independent claim 1 is directed to a homogeneous pharmaceutical composition for topical administration comprising at least 5% by weight, based

on the total weight of the composition, of minoxidil or a pharmaceutically acceptable salt thereof; an acid in an amount to substantially completely solubilize the minoxidil or a pharmaceutically acceptable salt thereof, wherein the acid is a mineral acid selected from the group consisting of hydrochloric acid, sulphuric acid, nitric acid, and phosphoric acid, or an organic acid selected from the group consisting of citric acid, acetic acid, succinic acid, maleic acid, benzoic acid, lactic acid and mixtures thereof; a solvent selected from water and/or a lower alcohol; and a co-solvent selected from one or more of the group consisting of aromatic and polyhydric alcohols present in an amount of less than approximately 10% by weight; wherein the final product of the homogeneous pharmaceutical composition is selected from the group consisting of a solution, lotion, ointment, mousse, a foam that breaks with shear, spray, aerosol, shampoo, conditioner, gel, cream, and paste (Specification, page 2, lines 3-14 and 23-26; page 3, lines 3-6; and page 4, lines 11-14 and 23-27).

Dependent claim 2 sets forth that the acid is added in an amount sufficient to provide an apparent pH to the composition of approximately 7.0 or less (Specification, from page 2, line 29 to page 3, line 1). Dependent claim 6 recites that the acid provides to the composition an apparent pH in the range of approximately 5.0 to 7.0 (Specification, page 3, lines 1-3). Dependent claim 8 sets forth that the acid includes acetic or lactic acid (Specification, page 3, lines 3-6). Dependent claim 15 provides that the acid is present at a level that provides at least 0.01 Normal acid (Specification, page 3, lines 7-8). Dependent claim 16 recites that the acid is present in an amount equal to or greater than the amount of the minoxidil in Normal amounts (Specification, page 3, lines 8-9).

Dependent claim 3 sets forth that the minoxidil or pharmaceutically acceptable salt thereof is present in an amount of from approximately 5 to 25% by weight, based on the total weight of the composition (Specification, page 2, lines 20-22). Dependent claim 4 provides that the minoxidil or pharmaceutically acceptable salt thereof is present in an amount of approximately 7.5 to 12% by weight, based on the total weight of the homogeneous pharmaceutical composition (Specification, page 2, lines 20-22). Dependent claim 19 recites that the minoxidil salt is minoxidil acetate or minoxidil lactate (Specification, page 2, lines 23-26).

Dependent claim 9 sets forth that the composition includes water and ethanol in a range of approximately 1:1 to 1:3 by volume (Specification, page 3, lines 10-12). Dependent claim 17 recites that the composition includes water and ethanol in a range of approximately 9:1 to 1:9 by volume (Specification, page 3, lines 10-12).

Dependent claim 10 sets forth that the co-solvent includes benzyl alcohol (Specification, page 3, line 13). Dependent claim 11 provides that the composition includes water and benzyl alcohol, wherein the benzyl alcohol is in an amount of approximately 40 to 100% by weight based on the total weight of the co-solvent system (Specification, from page 3, line 27 to page 4, line 1). Dependent claim 12 sets forth that the water is present in an amount no greater than approximately 60% by weight based on the total weight of the co-solvent system (Specification, page 4, lines 2-3). Dependent claim 13 recites that the co-solvent system includes an alkylene glycol, and dependent claim 14 provides that the alkylene glycol is selected from one or more of the group consisting of glycerol, 1,3-butylene glycol, and propylene glycol (Specification, page 3, lines 17-20).

Dependent claim 20 sets forth that the homogeneous pharmaceutical composition comprises approximately 5 to 12% by weight, based on the total weight of the composition, of a minoxidil or a minoxidil acid salt; approximately 88 to 95% by weight of a solvent composition including approximately 10 to 70% by weight of ethanol, approximately 2.5 to 85% by weight of benzyl alcohol, and less than 10% by weight of propylene glycol (Specification, page 4, lines 4-10).

Independent claim 21 is directed to a method for the treatment of hair loss and related indications in humans, comprising the steps of providing a homogeneous pharmaceutical composition for topical administration having at least 5% by weight, based on the total weight of the composition, of minoxidil or a pharmaceutically acceptable salt thereof; an acid in an amount to substantially completely solubilize the minoxidil or a pharmaceutically acceptable salt thereof, wherein the acid is a mineral acid selected from the group consisting of hydrochloric acid, sulphuric acid, nitric acid, and phosphoric acid, or an organic acid selected from the group consisting of citric acid, acetic acid, succinic acid, maleic acid, benzoic acid, lactic acid and mixtures thereof; a solvent selected from water and/or a lower alcohol; a co-solvent selected

from one or more of the group consisting of aromatic and polyhydric alcohols present in an amount of less than approximately 10% by weight; and applying topically to the human scalp a therapeutically or prophylactically effective amount of the homogeneous pharmaceutical composition (Specification, page 2, lines 23-26; page 3, lines 3-6; page 4, lines 23-27; and from page 5, line 29 to page 6, line 16).

Dependent claim 23 sets forth that the minoxidil salt is minoxidil acetate or minoxidil lactate (Specification, page 2, lines 23-26).

Dependent claim 24 provides that the homogeneous pharmaceutical composition comprises approximately 5 to 12% by weight, based on the total weight of the composition, of minoxidil or a minoxidil acid salt; approximately 88 to 95% by weight of a solvent composition including approximately 10 to 70% by weight of ethanol, approximately 2.5 to 85% by weight of benzyl alcohol, and less than 10% by weight of propylene glycol (Specification, page 6, lines 22-28).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Whether claims 1-6, 8-9, and 12-19 are obvious under the judicially created doctrine of obviousness-type double patenting for not being patentably distinct over the claims of co-pending U.S. Patent Application No.10/124,197.

B. Whether claims 1-3, 6, 8-9, 12-17, 19, 21, and 23 are obvious under 35 U.S.C. § 103(a) over Bazzano (U.S. Patent No. 5,183,817) by itself or optionally in view of Weiner *et al.* (WO 97/12602).

C. Whether claims 1-4, 5-6, 8-9, 12-19, and 21-23 are obvious under 35 U.S.C. § 103(a) over Navarro *et al.* (WO 95/25500) in view of Weiner *et al.*

D. Whether claims 10-11, 20, and 24 are obvious under 35 U.S.C. § 103(a) over Bazzano in view of Weiner *et al.* and further in view of Uchikawa *et al.* (U.S. Patent No. 5,156,836).

E. Whether claims 10-11, 20, and 24 are obvious under 35 U.S.C. § 103(a) over Navarro *et al.* in view of Weiner *et al.* and further in view of Uchikawa *et al.*

F. Whether claims 1-3, 5-6, 8-9, 12-19, and 21-23 are obvious under 35 U.S.C. § 103(a) over Di Schiena (U.S. 4,866,067) in view of Weiner *et al.*

VII. ARGUMENT

A. Double patenting rejection over U.S. Patent Application No.10/124,197.

In the Office Action dated May 16, 2005, claims 1-6, 8-9, and 12-19 were rejected under the judicially created doctrine of obviousness-type double patenting for allegedly not being patentably distinct over the claims of co-pending U.S. Patent Application No.10/124,197 (now U.S. Patent No. 6,946,120). The Examiner has indicated that the double patenting rejection can be overcome by the filing of a Terminal Disclaimer (*see*, page 4 of the Office Action).

However, Appellants have already filed a Terminal Disclaimer that identifies the subject application in U.S. Patent Application No.10/124,197, which has now issued as U.S. Patent No. 6,946,120. As the subject application has already been identified in the Terminal Disclaimer filed in the earlier issued case, there is no reason to file yet another terminal disclaimer over the exact same application in the subject application. Accordingly, Appellants respectfully request that the Board overturn this rejection.

B. Rejection under 35 U.S.C. § 103(a) over Bazzano by itself or optionally in view of Weiner *et al.*

In the Office Action dated May 16, 2005, claims 1-3, 6, 8-9, 12-17, 19, 21, and 23 were rejected as allegedly being obvious over Bazzano (U.S. Patent No. 5,183,817) by itself or optionally in view of Weiner *et al.* (WO 97/12602). The Examiner states that the current claim language does not exclude the use of a retinoid as taught by Bazzano (*see,* page 7 of the Office Action). The Examiner also states that it would have been obvious to one skilled in the art to modify the formulation of Bazzano to include an acid salt of minoxidil as taught by Weiner *et al.* (*see,* page 6 of the Office Action). In response, Appellants respectfully traverse the rejection.

As set forth in M.P.E.P. § 2144.04:

> [t]he omission of an element and retention of its function is an indicia of unobviousness. [Emphasis in original] *In re Edge*, 359 F.2d 896, 149 U.S.P.Q. 556 (CCPA 1966).

In this regard, the Board's attention is respectfully directed to column 5, lines 16-41, of Bazzano, which states the following:

> [t]he present invention ***combines*** the use of retinoid compounds with minoxidil....While neither compound alone may have profound effects on advanced alopecias, ***in combination*** the compounds are very effective as promoters of new hair growth in areas of alopecia. The net result of application of minoxidil and retinoids is initiation and production of new hair growth and conversion of vellus to terminal hair growth....[T]his effect is obtained not merely as the addition of two compounds, but as synergism, i.e., the ***combination*** of these substances in the present invention produces an effect which cannot be produced by either compound separately under conditions of its use and, therefore, represents a major advance in the treatment of alopecia. [Emphasis added]

From the foregoing, it is clear that Bazzano teaches the ***combined*** use of minoxidil and a retinoid for promoting new hair growth. In fact, the retinoid is an essential element of Bazzano because it ***must be combined*** with minoxidil in order to effectively treat alopecia. However, the present invention does not require that a retinoid be combined with minoxidil in order to effectively treat alopecia. Rather, the present invention promotes new hair growth by significantly increasing the solubility and concentration of minoxidil in the formulation. As a result, Appellants assert that the present invention omits an essential element of Bazzano (*i.e.,* a retinoid) while retaining its function (*i.e.,* promoting new hair growth). Thus, the present invention is unobvious in view of Bazzano.

In addition, Appellants respectfully submit that to establish a *prima facie* case of obviousness, all the claim limitations must be taught or suggested by the prior art reference. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). As discussed above, Bazzano requires ***combining*** a retinoid with minoxidil for treating alopecia. However, Bazzano simply fails to teach or suggest the use of minoxidil ***without*** a retinoid. In essence, Bazzano only teaches the limitation of "minoxidil in combination with a retinoid," but ***not*** either component alone. In fact, Bazzano ***teaches away*** from the use of either compound alone by stating that "the ***combination*** of these substances in the present invention produces an effect which cannot be produced by either compound separately under conditions of its use and, therefore, represents a major advance in the treatment of alopecia" (Emphasis added; col. 5, lines 37-41). As a result,

Appellants assert that Bazzano does not teach the limitation of "at least 5% by weight, based on the total weight of the composition, of minoxidil or a pharmaceutically acceptable salt thereof" set forth in claim 1 because Bazzano does not teach or suggest the use of minoxidil ***without*** a retinoid. As such, the omission of a retinoid in the present invention is a strong indicia of unobviousness.

Weiner *et al.* do not supply the deficiencies of Bazzano. In particular, Weiner *et al.* teach that minoxidil can be modified to make it more hydrophilic, for example, by converting it to an acid such as a lactic acid salt (*see,* page 4, lines 13-18). After the minoxidil has been made more hydrophilic, it ***must*** thereafter be encapsulated in a lipid vesicle in order to achieve improved penetration through hair follicles (*see,* page 3, lines 5-10). Weiner *et al.* teach a two-step process. However, Weiner *et al.* do not teach or suggest that its lipid vesicle formulations ***exclude*** the use of a retinoid. As a result, even if the formulation of Bazzano was modified to include an acid salt of minoxidil as taught by Weiner *et al.*, one skilled in the art would have no motivation to modify the formulation by removing the requirement for a retinoid, which represents an essential element of Bazzano. Further, based upon the teaching of Bazzano that the ***combination*** of a retinoid and minoxidil is very effective at promoting new hair growth in areas of alopecia while neither compound alone has profound effects on advanced alopecias, one skilled in the art would have no reasonable expectation that modifying the formulation of Bazzano to include an acid salt of minoxidil ***while removing*** the requisite retinoid would be successful.

Further, the hypothetical combination that the Examiner has contemplated would still require that the combination of minoxidil and a retinoid as taught by Bazzano be thereafter encapsulated by the lipid vesicle of Weiner *et al.* Only after the composition is encapsulated does the vesicle achieve improved penetration through hair follicles as taught by Weiner *et al.* (*see,* page 3, lines 5-10). Weiner *et al.* teach that the therapeutic agent is i) first modified to become more hydrophilic and thereafter, ii) the modified therapeutic agent is encapsulated in a lipid vesicle. In view of the foregoing, Appellants respectfully request that the Board withdraw the rejection.

C. Rejection under 35 U.S.C. § 103(a) over Navarro *et al.* in view of Weiner *et al.*

In the Office Action dated May 16, 2005, claims 1-4, 5-6, 8-9, 12-19, and 21-23 were rejected as allegedly being obvious over Navarro *et al.* (WO 95/25500) in view of Weiner *et al.* The Examiner states that it would have been obvious to one skilled in the art to combine the teachings of these references and substitute the cyclodextrin of Navarro *et al.* (WO 95/25500) with the acid salt of minoxidil of Weiner *et al.* (*see,* page 9 of the Office Action). The Examiner also states that Navarro *et al.* (WO 95/25500) teach a composition containing 0.1% to 7% minoxidil (*see,* page 8 of the Office Action). However, Appellants would like to point out that this reference actually teaches a hair composition containing ***0.1% to 3% minoxidil*** (*see,* page 2, lines 19-25). Appellants respectfully submit that the Examiner may be referring to the teaching of the related Navarro *et al.* reference of record, WO 97/03638, which discloses the higher concentration of minoxidil. In any event, for the reasons discussed below, neither Navarro *et al.* alone, or in combination with Weiner *et al.*, renders the present invention obvious.

Essentially, both Navarro *et al.* references ("Navarro *et al.*") teach encapsulating minoxidil in a cyclodextrin carrier, wherein cyclodextrin functions as a "host" molecule to trap the minoxidil "guest" molecule inside the ring. Navarro *et al.* also teach that the prior art use of solvents such as propylene glycol is to solubilize the active ingredient; however, the use of propylene glycol tends to give a greasy, shiny, and unattractive appearance to the hair upon application. In solving this prior art deficiency, Navarro *et al.* teach the use of cyclodextrin in order to assist in the solubilization of minoxidil while avoiding high amounts of propylene glycol.

For example, Navarro *et al.* (WO 95/25500) sets forth:

> [t]he amount of cyclodextrin present in the composition for hair is such that it permits a substantial reduction in the amount of solvent for minoxidil which would normally need to be added to achieve a comparable solubility of minoxidil in the absence of the aforementioned cyclodextrin. Page 2, lines 26-30.

Similarly, Navarro *et al.* (WO 97/03638) states the following:

> [t]he amount of γ-cyclodextrin present in the composition for hair is such that it permits a substantial reduction in the amount of solvent for minoxidil which would normally need to be added to achieve a

comparable solubility of minoxidil in the absence of the aforementioned cyclodextrin. Page 3, lines 9-13.

From the foregoing, it is clear that cyclodextrin is an essential element of Navarro *et al.* because it ***must be combined*** with minoxidil in order to impart improved solubility properties to minoxidil, thereby reducing the amount of solvent such as propylene glycol needed in the formulation. However, the present invention does not require that cyclodextrin be combined with minoxidil in order to impart improved solubility properties to minoxidil while reducing the amount of propylene glycol needed in the formulation. Rather, the present invention significantly increases the solubility of minoxidil without the need of using large amounts of propylene glycol by adjusting the acid concentration in the formulation (*see,* page 2, lines 15-18). As a result, Appellants assert that the present invention omits an essential element of Navarro *et al.* (*i.e.,* a cyclodextrin) while retaining its function (*i.e.,* imparting improved solubility properties to minoxidil). M.P.E.P. § 2144.04. Thus, the present invention is unobvious in view of Navarro *et al.*

In addition, Appellants respectfully submit that to establish a *prima facie* case of obviousness, all the claim limitations must be taught or suggested by the prior art reference. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). As discussed above, Navarro *et al.* require ***combining*** a cyclodextrin with minoxidil, *i.e.,* forming a cyclodextrin-minoxidil "host-guest" complex. However, Navarro *et al.* simply fail to teach or suggest the use of minoxidil ***without*** a cyclodextrin. In essence, Navarro *et al.* only teach the limitation of a "cyclodextrin-minoxidil complex," but ***not*** either component alone. In fact, Navarro *et al.* ***teach away*** from the use of either compound alone by disclosing that it is the ***combination*** of these substances which imparts improved solubility properties to minoxidil while reducing the amount of solvent needed. As a result, Appellants assert that Navarro *et al.* do not teach the limitation of "at least 5% by weight, based on the total weight of the composition, of minoxidil or a pharmaceutically acceptable salt thereof" set forth in claim 1 because Navarro *et al.* do not teach or suggest the use of minoxidil ***without*** a cyclodextrin. As such, the present invention is unobvious in view of either Navarro *et al.* reference.

Weiner *et al.* do not supply the deficiencies of Navarro *et al.* In particular, Weiner *et al.* teach that minoxidil can be modified to make it more hydrophilic, for example, by converting it to an acid such as a lactic acid salt or by encapsulating it in cyclodextrin (*see,* page 3, lines 15-19). After the minoxidil has been made more hydrophilic, it ***must*** thereafter be encapsulated in a lipid vesicle in order to achieve improved penetration through hair follicles (*see,* page 3, lines 5-10). In essence, Weiner *et al.* teach a 2-step process. According to the Examiner, one skilled in the art would have been motivated to substitute the cyclodextrin encapsulated minoxidil of Navarro *et al.* (WO 95/25500) with a lipid vesicle encapsulated minoxidil lactate, because Weiner *et al.* compares the two formulations and shows that the lipid vesicle encapsulated minoxidil lactate affords better penetration (*see,* page 10 of the Office Action dated May 16, 2005). However, Appellants respectfully point out to the Board that such a substitution would destroy the aim of Navarro *et al.* In particular, the proposed modification that the Examiner contemplates would no longer follow the teaching of Navarro *et al.* that encapsulation of minoxidil by cyclodextrin is required in order to impart improved solubility properties to minoxidil.

Under MPEP § 2143.01, in making a *prima facie* case of obviousness, the Examiner's proposed modification ***cannot*** render the prior art unsatisfactory for its intended purpose:

> If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984).

In this case, the Examiner's proposed modification would eviscerate the primary aims of Navarro *et al.* and render the formulation unsatisfactory for its intended purpose. In fact, the modified formulation, which would contain the lipid vesicle encapsulated minoxidil lactate of Weiner *et al.* instead of the cyclodextrin encapsulated minoxidil of Navarro *et al.*, would destroy the objective of Navarro *et al.* of producing a lotion which is pleasant to use by formulating minoxidil within an inclusion complex of cyclodextrin. Further, in the absence of cyclodextrin, there would be insufficient penetration without the presence of high concentrations of propylene glycol, which tends to give a greasy, shiny, and unattractive appearance to the hair.

Thus, the Examiner's proposed modification would create an unpleasant product that Navarro *et al.* is trying to avoid.

Navarro *et al.* and Weiner *et al.* both teach encapsulated minoxidil

1. Navarro

Essentially, Navarro *et al.* teach encapsulating a minoxidil molecule in a cyclodextrin carrier. As explained previously, the role of cyclodextrin in Navarro *et al.* is to function as a "host" molecule to trap the minoxidil "guest" molecule inside the ring. In addition, Navarro teaches that the prior art use of propylene glycol is to solubilize the active ingredient and to ensure good penetration. Navarro *et al.* further teach the problem of using propylene glycol, which tends to give a greasy, shiny and unattractive appearance to the hair upon application. In solving these prior art deficiencies, Navarro *et al.* teach the use of γ-cyclodextrin in order to assist in solubilization and ensure good penetration of minoxidil while avoiding high amounts of propylene glycol. It is this minoxidil-cyclodextrin "host-guest" complex that imparts improved solubility properties and ensures good penetration of the Navarro's formulation.

2. Weiner *et al.*

Weiner *et al.* actually teach that the encapsulation process comprises two steps. In the first step, "the modification step," Weiner *et al.* teach, "**[f]irst, the materials themselves are modified to make them more hydrophilic by reacting them with an acid or base, e.g., an organic acid or base such as lactic acid**. In fact, the use of hydrophobic materials in lipid vesicles is contraindicated since they do not penetrate as well as the hydrophilic materials." [Emphasis added]. (Please see, page 4, lines 13-18). Thus, the "modification step" is to make minoxidil more hydrophilic.

In the second step, the material so modified is then encapsulated. Weiner *et al.* teach, **[t]he modified therapeutic material is encapsulated in a lipid vesicle** and the lipid vesicle is delivered to the skin portion having hair follicles, whereby the hair follicles appear to act as a conduit for the therapeutic material. [Emphasis added] (Please see page 3, lines 7-10).

With regard to step 1, "the modification step," Weiner *et al.* teach that minoxidil can be modified to make it more hydrophilic. For example, it may be converted to an acid such as a lactic acid salt or by encapsulating it in cyclodextrin. However, a fair reading of Weiner *et al.*, would **require** that *after* the first step is accomplished, the second step of Weiner *et al.* must still be undertaken. That is, **[t]he modified therapeutic material is encapsulated in a lipid vesicle** and the lipid vesicle is delivered to the skin portion having hair follicles, whereby the hair follicles appear to act as a conduit for the therapeutic material. [Emphasis added] (Please see page 3, lines 7-10).

Thus, a fair reading of both references is that in order to make minoxidil more deliverable, it **must be** encapsulated either by cyclodextrin as taught by Navarro or non-phospholipid lipid vesicle, *i.e.*, a liposome as taught by Weiner *et al.* With regard to Navarro, the procedure is to encapsulate "unmodified" minoxidil in a cyclodextrin, preferably a γ-cyclodextrin. With regard to Weiner *et al.*, the procedure is to first modify minoxidil and thereafter encapsulate the modified minoxidil in a liposome. Neither Navarro nor Weiner teach or suggest that unencapsulated minoxidil can be delivered effectively in a polar solvent. In this regard, Appellants respectfully direct the Board's attention to Wiener *et al.* at page 6, Table 1, wherein the penetration capabilities of Formulation III (formulation of lactic acid salt of minoxidil encapsulated in a liposome) against Formulation XI (formulation unencapsulated lactic acid salt of minoxidil) are set forth. The results indicate that the encapsulated lactic acid salt of minoxidil has significantly greater penetration capabilities over the unencapsulated formulation. Thus, there is no motivation to react minoxidil with an acid, without encapsulating the resulting minoxidil salt in a liposome of Weiner *et al.* In view of the foregoing, the withdrawal of the obviousness rejection by the Board is respectfully requested.

D. Rejection under 35 U.S.C. § 103(a) over Bazzano in view of Weiner *et al.* and further in view of Uchikawa *et al.*

In the Office Action dated May 16, 2005, claims 10-11, 20, and 24 were rejected as being allegedly obvious over Bazzano in view of Weiner *et al.* and further in view of Uchikawa *et al.* (U.S. Patent No. 5,156,836). The Examiner states that it would have been

obvious to one skilled in the art to combine the teachings of these references and substitute the ethanol solvent of Bazzano with the benzyl alcohol solvent of Uchikawa *et al.* (*see,* page 11 of the Office Action). In response, Appellants respectfully traverse the rejection.

As discussed above, the present invention is unobvious in view of Bazzano and Weiner *et al.* Appellants assert that Uchikawa *et al.* do not supply the deficiencies of these references. In particular, Uchikawa *et al.* teach a composition for revitalizing hair that includes an amine oxide (*see,* col. 1, lines 55-57). Uchikawa *et al.* also disclose minoxidil and benzyl alcohol as part of a long list of general purpose components (*see*, col. 4, lines 7-33). However, Uchikawa *et al.* do not teach or suggest that its hair revitalizing compositions ***exclude*** the use of a retinoid. As a result, even if the formulation of Bazzano was modified to include an acid salt of minoxidil as taught by Weiner *et al.* and a benzyl alcohol solvent as taught by Uchikawa *et al.*, one skilled in the art would have had no motivation to modify the formulation by removing the requirement for a retinoid, which represents an essential element of Bazzano. Further, based upon the teaching of Bazzano that the ***combination*** of a retinoid and minoxidil is very effective at promoting new hair growth in areas of alopecia while neither compound alone has profound effects on advanced alopecias, one skilled in the art would not have had any reasonable expectation that modifying the formulation of Bazzano to include an acid salt of minoxidil and a benzyl alcohol solvent ***while removing*** the requisite retinoid would be successful. In view of the foregoing, Appellants respectfully request that the Board overturn the rejection.

E. Rejection under 35 U.S.C. § 103(a) over Navarro *et al.* in view of Weiner *et al.* and further in view of Uchikawa *et al.*

In the Office Action dated May 16, 2005, claims 10-11, 20, and 24 were rejected as allegedly being obvious over Navarro *et al.* in view of Weiner *et al.* and further in view of Uchikawa *et al.* The Examiner states that it would have been obvious to one skilled in the art to combine the teachings of these references and substitute the ethanol solvent of Navarro *et al.* with the benzyl alcohol solvent of Uchikawa *et al.* (*see,* page 13 of the Office Action). In response, Appellants respectfully traverse the rejection.

Again, Appellants would like to point out that Navarro *et al.* (WO 95/25500) actually teaches a hair composition containing ***0.1% to 3% minoxidil*** (*see,* page 2, lines 19-25). Appellants respectfully submit that the Examiner may be referring to the teaching of the related Navarro *et al.* reference of record, WO 97/03638, which discloses the higher concentration of minoxidil. In any event, neither Navarro *et al.* reference, alone or in combination with Weiner *et al.* and Uchikawa *et al.*, renders the present invention obvious.

As discussed above, the present invention is unobvious in view of Navarro *et al.* and Weiner *et al.* Appellants assert that Uchikawa *et al.* do not supply the deficiencies of these references. In particular, Uchikawa *et al.* teach a composition for revitalizing hair that includes an amine oxide (*see,* col. 1, lines 55-57). Uchikawa *et al.* also discloses minoxidil and benzyl alcohol as part of a long list of general purpose components (*see*, col. 4, lines 7-33). However, Uchikawa *et al.* do not teach or suggest that its hair revitalizing compositions ***exclude*** the use of a cyclodextrin. As a result, even if the formulation of Navarro *et al.* was modified to include an acid salt of minoxidil as taught by Weiner *et al.* and a benzyl alcohol solvent as taught by Uchikawa *et al.*, one skilled in the art would have no motivation to modify the formulation by removing the requirement for a cyclodextrin, which not only represents an essential element of Navarro *et al.*, but would also render the formulation unsatisfactory for its intended purpose. Further, based upon the teaching of Navarro *et al.* that it is the ***combination*** of cyclodextrin and minoxidil that imparts improved solubility properties to minoxidil while reducing the amount of solvent needed, one skilled in the art would not have had any reasonable expectation that modifying the formulation of Navarro *et al.* to include an acid salt of minoxidil and a benzyl alcohol solvent ***while removing*** the requisite cyclodextrin would be successful. In view of the foregoing, Appellants respectfully request that the Board withdraw the rejection.

F. Rejection under 35 U.S.C. § 103(a) over Di Schiena (U.S. 4,866,067) in view of Weiner *et al.*

In the Office Action dated May 16, 2005, claims 1-3, 5-6, 8-9, 12-19, and 21-23 were rejected as allegedly being obvious over Di Schiena (U.S. 4,866,067) in view of Weiner *et al.* The Examiner states that a proper comparison of Di Schiena and the inventive formulation cannot be made since Appellants have not provided the components of the inventive formulation (*see,* page 15 of the Office Action). In response, Appellants respectfully traverse the rejection.

As the Board is aware, Appellants can rebut a *prima facie* case of obviousness by presenting comparative test data showing that the claimed invention possesses unexpectedly improved properties or properties that the prior art does not possess. *In re Dillon*, 16 U.S.P.Q. 1897, 1901 (Fed. Cir. 1990). In this regard, the Board's attention is respectfully directed to the Declaration of Mr. Albert Zorko Abram under 37 C.F.R. § 1.132 submitted on July 21, 2003 ("the 2003 Declaration"). In the 2003 Declaration, Mr. Abram explained that after mixing the constituent parts of the comparative foam formulation (*i.e.,* the Di Schiena formulation of Example 3(e)), the resulting mixture was brown in color and separated into two phases (*i.e.,* biphasic) upon standing (*see,* paragraph 13 of the 2003 Declaration). In stark contrast, Mr. Abram declared that after mixing the constituent parts of the inventive foam formulation, the resulting mixture was a clear and colorless single-phase (*i.e.,* homogeneous) solution (*see,* paragraph 14 of the 2003 Declaration). The ***homogeneous*** nature of the inventive formulation had several ***unexpected advantageous properties*** that were not present in the ***heterogeneous*** comparative formulation, including foam consistency, uniformity of dosing, foam color, foam stability, and advantageous mechanical shear properties (*see,* paragraphs 15-28 of the 2003 Declaration).

Although Appellants believe that the side-by-side comparative evidence presented in the 2003 Declaration is more than sufficient to rebut any *prima facie* case of obviousness, Appellants provide the components of the inventive formulation in the following table to remove all doubt that they have been fully disclosed.

Component	% w/w
Minoxidil	4.75
Ethanol	53.645
Purified Water	31.410
Butylated Hydroxytoluene	0.095
Lactic Acid (90%)	1.00
Citric Acid	0.10
Stearyl Alcohol	0.50
Cetyl Alcohol	1.10
Polysorbate 60	0.40
Propylene Glycol	2.00
Propellant P70	5.00
Total	100.00

Appellants assert that this table clearly shows the identity ("Component") and amount ("% w/w") of each and every component in the inventive formulation used for the side-by-side comparison. As such, Appellants have provided, in the form of the 2003 Declaration and the table above, a side-by-side comparison of the inventive formulation against the Di Schiena comparative formulation that is effective to rebut a *prima facie* case of obviousness because Appellants have shown that the claimed invention possesses unexpectedly improved solution and mechanical properties over Di Schiena.

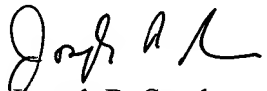
In view of the unexpected and surprising results, Appellants submit that Di Schiena does not present a bar under 35 U.S.C. § 103(a), either alone or in combination with Weiner *et al.*, to the patentability of the present invention. Accordingly, Appellants respectfully request that the Board overturn the rejection.

CONCLUSION

Appellants believe that the above discussion is fully responsive to all grounds of rejection set forth in the Office Action dated May 16, 2005.

If for any reason the Examiner believes a telephone conference would in any way expedite resolution of the issues raised in this appeal, the Examiner is invited to telephone the undersigned at 925-472-5000.

Respectfully submitted,



Joseph R. Snyder
Reg. No. 39,381

TOWNSEND and TOWNSEND and CREW LLP
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San Francisco, California 94111-3834
Tel: 925-472-5000
Fax: 415-576-0300
JS:jch
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VIII. CLAIMS APPENDIX

1. A homogeneous pharmaceutical composition for topical administration comprising:

at least 5% by weight, based on the total weight of the composition, of minoxidil or a pharmaceutically acceptable salt thereof;

an acid in an amount to substantially completely solubilise the minoxidil or a pharmaceutically acceptable salt thereof, wherein the acid is a mineral acid selected from the group consisting of hydrochloric acid, sulphuric acid, nitric acid, and phosphoric acid, or an organic acid selected from the group consisting of citric acid, acetic acid, succinic acid, maleic acid, benzoic acid, lactic acid and mixtures thereof;

a solvent selected from water and/or a lower alcohol;

a co-solvent selected from one or more of the group consisting of aromatic and polyhydric alcohols present in an amount of less than approximately 10% by weight;

wherein the final product of the homogeneous pharmaceutical composition is selected from the group consisting of a solution, lotion, ointment, mousse, a foam that breaks with shear, spray, aerosol, shampoo, conditioner, gel, cream and paste.

2. A homogeneous pharmaceutical composition according to Claim 1, wherein the acid is added in an amount sufficient to provide an apparent pH to the composition of approximately 7.0 or less.

3. A homogeneous pharmaceutical composition according to Claim 1, wherein the minoxidil or pharmaceutically acceptable salt thereof is present in an amount of

from approximately 5 to 25% by weight, based on the total weight of the homogeneous pharmaceutical composition.

4. A homogeneous pharmaceutical composition according to Claim 3, wherein the minoxidil or pharmaceutically acceptable salt thereof is present in an amount of approximately 7.5 to 12% by weight, based on the total weight of the homogeneous pharmaceutical composition.

6. A homogeneous pharmaceutical composition according to Claim 2, wherein the acid provides to the composition an apparent pH in the range of approximately 5.0 to 7.0.

8. A homogeneous pharmaceutical composition according to Claim 2, wherein the acid includes acetic or lactic acid.

9. A homogeneous pharmaceutical composition according to Claim 1, wherein the composition includes water and ethanol in a range of approximately 1:1 to 1:3 by volume.

10. A homogeneous pharmaceutical composition according to Claim 1, wherein the co-solvent includes benzyl alcohol.

11. A homogeneous pharmaceutical composition according to Claim 1, wherein the composition includes water and benzyl alcohol wherein the benzyl alcohol is in an amount of approximately 40 to 100% by weight based on the total weight of the co-solvent system.

12. A homogeneous pharmaceutical composition according to Claim 1, wherein the water is present in an amount no greater than approximately 60% by weight based on the total weight of the co-solvent system.

13. A homogeneous pharmaceutical composition according to Claim 1, wherein the co-solvent system includes an alkylene glycol.

14. A homogeneous pharmaceutical composition according to Claim 13, wherein the alkylene glycol is selected from one or more of the group consisting of glycerol, 1,3-butylene or propylene glycol.

15. A homogeneous pharmaceutical composition according to Claim 1, wherein the acid is present at a level that provides at least 0.01 Normal acid.

16. A homogeneous pharmaceutical composition according to Claim 1, wherein the acid is present in an amount equal to or greater than the amount of the minoxidil in Normal amounts.

17. A homogeneous pharmaceutical composition according to Claim 1, wherein the composition includes water and ethanol in a range of approximately 9:1 to 1:9 by volume.

19. A homogeneous pharmaceutical composition according to Claim 1 wherein the minoxidil salt is minoxidil acetate or minoxidil lactate.

20. A homogeneous pharmaceutical composition according to Claim 1, including

approximately 5 to 12% by weight, based on the total weight of the composition, of a minoxidil or a minoxidil acid salt;

approximately 88 to 95% by weight of a solvent composition including approximately 10 to 70% by weight of ethanol, approximately 2.5 to 85% by weight of benzyl alcohol; and

less than 10% by weight, propylene glycol.

21. A method for the treatment of hair loss and related indications in humans, comprising the steps of:

providing a homogeneous pharmaceutical composition for topical administration having at least 5% by weight, based on the total weight of the composition, of minoxidil or a pharmaceutically acceptable salt thereof;

an acid in an amount to substantially completely solubilise the minoxidil or a pharmaceutically acceptable salt thereof, wherein the acid is a mineral acid selected from the group consisting of hydrochloric acid, sulphuric acid, nitric acid, and phosphoric acid, or an organic acid selected from the group consisting of citric acid, acetic acid, succinic acid, maleic acid, benzoic acid, lactic acid and mixtures thereof;

a solvent selected from water and/or a lower alcohol;

a co-solvent selected from one or more of the group consisting of aromatic and polyhydric alcohols present in an amount of less than approximately 10% by weight; and

applying topically to the human scalp a therapeutically or prophylactically effective amount of the homogeneous pharmaceutical composition.

23. A method according to Claim 21, wherein the minoxidil salt is minoxidil acetate or minoxidil lactate.

24. A method according to Claim 21, wherein the homogeneous pharmaceutical composition includes

approximately 5 to 12% by weight, based on the total weight of the composition, of minoxidil or a minoxidil acid salt;

approximately 88 to 95% by weight of a solvent composition including approximately 10 to 70% by weight of ethanol, approximately 2.5 to 85% by weight of benzyl alcohol; and

less than 10% by weight, propylene glycol.

IX. EVIDENCE APPENDIX

A copy of the Declaration of Mr. Albert Zorko Abram under 37 C.F.R. § 1.132 submitted on July 21, 2003 ("the 2003 Declaration") is attached as Exhibit A. The 2003 Declaration was entered in the record by the Examiner in the Office Action dated October 17, 2003.

X. RELATED PROCEEDINGS APPENDIX

None.

PATENT
Attorney Docket No.: 021706-000810US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	
Tony Wai-Chiu So et al.	Examiner: Sharmila S. Gollamudi
Application No.: 10/124,197	
Filed: April 16, 2002	Art Unit: 1616
For: PHARMACEUTICAL COMPOSITION	DECLARATION UNDER 37 CFR § 1.132

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

I, Albert Zorko Abram, being duly warned that willful false statements and the like are punishable by fine or imprisonment or both, under 18 U.S.C. § 1001, and may jeopardize the validity of the patent application or any patent issuing thereon, state and declare as follows:

1. All statements herein made of my own knowledge are true and statements made on information or belief are believed to be true.

2. I am currently employed by Connetics Australia Pty Ltd, the assignee of the subject application.

3. I am a Senior Chemist –Technical IP Associate and have been in pharmaceutical research since 1987. I have been employed doing dermatological product development for the last 15 years. My *Curriculum Vitae* is attached herewith. **(Exhibit A)**

4. I have reviewed and analyzed the above-referenced patent application, and I am familiar with the contents therein.

5. I have read the Office Action, dated October 2, 2003, received in the present case, and I have reviewed the references cited therein by the Examiner.

6. It is my understanding that the Examiner has rejected claims 27, 31-36 and 38-46 under 35 U.S.C. § 103(a) as allegedly being obvious over U.S. Patent No. 4,866,067 ("Di Schiena") in view of U.S. Patent No. 5,041,439 ("Kasting et al."). For the reasons set forth herein, the Examiner's concerns are overcome.

7. The formulation set forth in column 3, example 3(e) of Di Schiena, entitled "Foam", was recently prepared in our laboratory at Connetics Australia following the teaching of Di Schiena with an understanding of the foam art.

8. The formulation of Di Schiena's Example 3(e) and a formulation of the present invention were prepared.

9. It is my scientific opinion that the Di Schiena formulation was prepared according to the teaching of U.S. Patent No. 4,866,067.

10. Di Schiena teaches the use of a chlorofluorocarbon propellant. However, chlorofluorocarbons ("CFCs") are no longer commercially available in most countries due to their ozone depleting potential and adverse environmental effects.

11. We have therefore substituted an accepted hydrocarbon for the CFCs of Di Schiena at an amount to produce a foam of acceptable quality. We have evaluated the Di Schiena foam over a range of temperatures and are satisfied that the hydrocarbon propellant is a suitable substitute for the CFCs propellant as disclosed in Di Schiena.

12. We performed a side-by-side comparison of the foam as disclosed in the subject application ("inventive") against the Di Schiena foam ("comparative") and found unexpected advantages in the inventive foam not present in the comparative foam.

Advantageous Solution Properties of the Inventive Formulation

13. After mixing the constituent parts of the comparative foam formulation (see Di Schiena example 3 (e) foam, col 3, lines 29-38) the resulting mixture was a brown color (**Exhibit B**). The formulation separated into 2 phases (biphasic) upon standing. The bottom layer was brown and opaque and the top layer was a dark brown color and clear.

14. By comparison, after mixing the constituent parts of the inventive foam formulation, the resulting mixture was a clear and colorless single-phase solution.

15. In the case of the two phase system of Di Schiena, it is necessary to shake the mixture to ensure homogeneity of the contents. Following shaking, the formulation of Di Schiena

returns to a two phase system upon standing. The inventive example does not require such intervention to dispense the formulation, as it exists as a clear and colorless single-phase solution. The top phase in the comparative example is primarily composed of the propellant. Therefore, the inventive example has the propellant dissolved in the system. If the propellant exists as a separate phase this will impact the foam-consistency, decrease shelf-life and most importantly, impart irregularity in dosing.

16. Uniformity of dosing is a major advantage of the inventive foam over the comparative formulation of Di Schiena. A dose of Minoxidil greater than that prescribed can have serious harmful effects to the user. These include, for example, scalp irritation. In the case of systemic absorption, reported side effects include salt and water retention, generalized and local oedema, pericardial effusion, pericarditis, tamponade, tachycardia, increased frequency of angina, or, the potentiation of the orthostatic hypotension produced by guanethidine.

17. In addition, the color of the solution has an impact on the color of the foam. It is also understood that a more intensely colored solution (prior to foam formation) will result in the appearance of the foam deviating from white to an off-white or colored appearance. The comparative foam formulation is brown and opaque, whereas the inventive foam formulation is clear and colorless.

18. It appears from the color difference that the comparative example has produced a different chemical entity that is responsible for the brown coloration. The inventive example has no such brown coloration. I have not undertaken any experimentation to identify the brown component in the comparative formulation.

19. Stability studies have also been conducted using the solvent system and teachings of Di Schiena. Two comparative examples were prepared for each of the following formulations, one containing 3% (w/w) minoxidil, the other containing 5% (w/w) minoxidil. Two samples of the inventive formulation containing 5% (w/w) minoxidil was also prepared. One set of samples were stored at 5°C, and the other set were stored at 50°C. Following one-month, no changes in the comparative or inventive samples were observed at 5°C. However, at 50°C, a crystalline precipitate was observed in the comparative example with 5% minoxidil, while the inventive sample contained no such precipitate. The crystal formation in the comparative solvent system indicates potential instability issues with that foam, and also potential incompatibility of the primary formulation components.

Advantageous Mechanical Properties of the Inventive Foam

20. The mechanical shear properties, including shear, viscosity and cone speed, of the inventive and comparative foams were determined using a rheometer applying constant shear stress to the two foam systems over a temperature range 20°C to 40°C. The use of a rheometer allows the rheological characterization of both Newtonian and non-Newtonian fluids. By controlling the shear stress applied to a sample of fluid, one can determine the fluid's internal

resistance to flow (i.e. viscosity) and also the rate at which the applied shear stress deforms the fluid sample (i.e. shear rate). This information allows distinctions to be made between the flow properties of dissimilar fluids and foam systems.

21. The inventive foam was formulated with 5% minoxidil, and the Di Schiena foam was formulated as demonstrated in Example 3(e). Two samples of each foam were subjected to the experimental conditions.

22. The foam samples were evaluated using a Brookfield R/S-CPS Rheometer. A constant shear stress was applied to the foam samples while the temperature was increased from 20°C to 40°C at a constant rate over a 5-minute span. The instantaneous shear rate, viscosity and temperature of each foam sample was recorded for the duration of the experiment. The elapsed time and the speed of cone rotation were also recorded. The results of these experiments are presented in Table 1 and **Exhibit C**.

23. **Table 1**: table of experimental data

Temperature Range (°C)	Inventive Foam			Comparative Foam		
	Shear Rate (1/s)	Viscosity (Pas)	Cone Speed (rpm)	Shear Rate (1/s)	Viscosity (Pas)	Cone Speed (rpm)
20-25	0	0	0	0.12-0.16	42-83	0.01-0.02
25-30	0.06-774	0-83	0-109	0.06-0.24	21-83	0.01-0.04
30-35	656-4840	0.001-0.008	10-807	0.12-0.3	17-42	0.02-0.05
35-40	maximum exceeded	maximum exceeded	maximum exceeded	0.18-0.78	6-42	0.02-0.13

24. As the temperature approaches 30°C, the inventive foam appears to soften dramatically. The applied shear stress is able to deform and subsequently destroy the foam structure. The results show a large increase in the rate of deformation (shear rate increases from 0.06/s to 774/s), a rapid change in sample viscosity as the sample is destroyed from zero Pas to 83 Pas and then to 0.008 Pas, as well as an increase in the cone speed (from zero to 109 rpm).

25. Above 30°C, the inventive foam is destroyed. The shear rate and cone rotation speed both increase exponentially until the maximum speed of the instrument is exceeded. The reported viscosity of the system is very low, which is consistent with the destruction of the foam.

26. The comparative example, however, undergoes only a slight change in mechanical properties with the application of a constant shear stress and increasing temperature. The results indicate that the applied shear stress is able to induce deformation of the comparative example immediately and continuously over the entire temperature range studied. The viscosity of the foam was reduced slightly as the temperature increased (from 83 Pas to 6 Pas), while the cone speed remained relatively constant (speed range from 0.01 to 0.13 rpm). The comparative foam structure persists for the duration of the experiment, i.e., the foam is not destroyed.

27. The conclusions of these shear experiments are the following: (1) at 20°C, the inventive foam sample is stiffer than the comparative foam sample; (2) at 30°C, the inventive foam sample is destroyed whereas the comparative foam sample persists; and (3) at 40°C, the comparative foam sample persists whereas the inventive sample no longer exists as a foam.

28. Based on the findings of this study, it would be expected that the inventive foam system is rapidly destroyed when applied topically at skin temperature (32°C), whereas the comparative example would be expected to persist as a foam following topical application.

The declarant has nothing further to say.

Albert Zorko Abram

1 April 2003

Date

Curriculum Vitae

Personal Details

Name Albert Zorko Abram

Address 3 Abbey Court
Wantirna
Victoria
Australia, 3152

Education

Post Secondary Bachelor of Science
Monash University
Completed in 1997

Secondary 1984
High School Certificate
Haileybury College

Work History

Job Details January 2003 - present
Senior Chemist Technical IP Associate
Connetics Australia Pty Ltd

Responsibilities
Oversee and provide technical leadership for company R&D programs in line with agreed corporate objectives
Liase with intellectual property professionals to facilitate the drafting of patent specifications
Coordinate technical activities in line with agreed intellectual property areas
Provide technical advice for intellectual property matters
Provide technical reviews of intellectual property pertinent to key in-house technologies
Keep abreast of new technologies and technical developments
Draft and issue company procedure forms to facilitate the running of the laboratory
Ensure that the company's quality systems are fully operational at all times
Interview prospective employees and train the Formulation Chemists in core scientific activities
Review of monthly technical progress reports
Provide technical service, advice and assistance to company divisions and clients
Provide technical leadership to ensure smooth and effective running of the laboratory
Provide technical advice to company staff and clients as required
To ensure all work in the laboratory is conducted in a safe manner in line with the company's safety policies

Job Details July 2001 – December 2002
Senior Chemistry Supervisor
Soltec Research Pty Ltd/Connetics Australia Pty Ltd
(Company name change to Connetics Australia Pty Ltd in October 2002)

Responsibilities
Manage formulation team projects
Prepare formulation development proposals
Prepare project plans in consultation with formulation development teams
Propose new research proposals and conduct research activities to evaluate project feasibility
Keep abreast of new technologies and technical developments
Draft and issue company procedure forms to facilitate the running of the laboratory
Ensure company's quality systems are fully operational at all times
Interview prospective employees and train the Formulation Team's personnel
To approve, allocate and coordinate projects to completion
Submission of monthly technical progress reports
Provide technical service, advice and assistance to company divisions and clients
Ensure smooth and effective running of the Dermatology/Formulation Team
Ensure an orderly and prioritised progression of all development work and provide technical advice to company staff and clients as required
To ensure all work in the laboratory is conducted in a safe manner in line with the company's safety policy
Provide technical advice for intellectual property matters

Key Achievements
Contributing author for "Barel/Maibach/Paye :Handbook of Cosmetic Science and Technology"
Primary project liaison for key product development programs

Job Details July 1999 – July 2001
Team Leader, Dermatology
Soltec Research

Responsibilities
Manage and coordinate the drafting and issue of MSDS, product specifications, manufacturing methods, product development proposals, reports and procedures.
Maintain the computer database relating to research, development and product evaluation work
Keep abreast of new technologies and technical developments
Draft and issue company procedure forms to facilitate the running of the laboratory
Ensure Soltec's quality systems are fully operational at all times
Interview prospective employees and train the Dermatology Team's personnel
To approve, allocate and coordinate projects to completion
Submission of monthly technical progress reports
Provide technical service, advice and assistance to company divisions and clients
Ensure smooth and effective running of the Dermatology Team
Ensure an orderly and prioritised progression of all development work and provide technical advice to company staff and clients as required
To ensure all work in the laboratory is conducted in a safe manner in line with the company's safety policy
Provide technical advice for intellectual property matters

Key Achievements	Primary project liaison for key product development programs
Reason for Leaving Position	Promotion

Job Details	July 1988 - June 1999 R & D Scientist Soltec Research
Responsibilities	Maintenance and purchase of laboratory equipment Prepare and coordinate project plans Process development Training staff in the art of formulation chemistry Report on research and development activities to management and clients Research and development of pharmaceutical, cosmetic, food, household, veterinary, automotive, industrial, aerosol and agricultural products Develop manufacturing methods and oversee pilot scale and commercial scale product manufacture Source active drug substances, raw materials and packaging for laboratory scale through to commercial scale product manufacture Conduct stability trials on product prototypes and commercial products for the purposes of determining physical and chemical stability, packaging compatibility and shelf-life Project management of product research and development programs Liase with manufacturers of aerosol products, solid dosage forms and liquid dosage forms for the purposes of improving manufacturing methods and product quality Preparation of technical reports and product dossiers for Soltec technologies Technical assistance for technology transfer Technical assistance for internal Business Development and Marketing Representing the company attend conferences, technical discussions, trade shows and seminars
Key Achievements	Development of commercially successful intellectual property and patented products Development of novel and improved technologies for the delivery of consumer product formulations

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Job Details	May 1987 - July 1988 Laboratory Assistant Soltec Research Pty Ltd
Responsibilities	Perform routine laboratory tasks Acquire hands-on experience and familiarity with common manufacturing equipment and processes in the cGMP manufacture of pharmaceuticals, cosmetics, agricultural, household and aerosol products.
Reason for Leaving Position	Promotion

Short Courses

December 1997
How to Supervise People
Fred Pryor Seminars

August 2000
Problem Solving & Decision Making
Kepner Tregoe

August 2000
Consultative Relationship Development
Maura Fay

August 2000
Edward de Bono's Six Hats Thinking
Advanced Practical Thinking Training Inc.

September 2000
Edward de Bono's Lateral Thinking
Advanced Practical Thinking Training Inc.

October 2000
Project Management
Kepner Tregoe

November 2000
Microsoft Project 98 Levels 1&2
Pollak Partners

January 2001
Time Management
Australian Institute of Management

May 2002
The New Supervisor
Australian Institute of Management

Current Licenses & Accreditation

Drivers' Licence
Fork Lift Operator Licence

Current Professional Membership & Registrations

Association of Profession Engineers, Scientists and Managers Australia
Australian Society of Cosmetic Chemists
Monash Alumni Association Inc.

Languages

First Language English

Other Languages	Slovenian - Fluent
	German - Conversational & Written Expression

Personal Strengths & Other Competencies

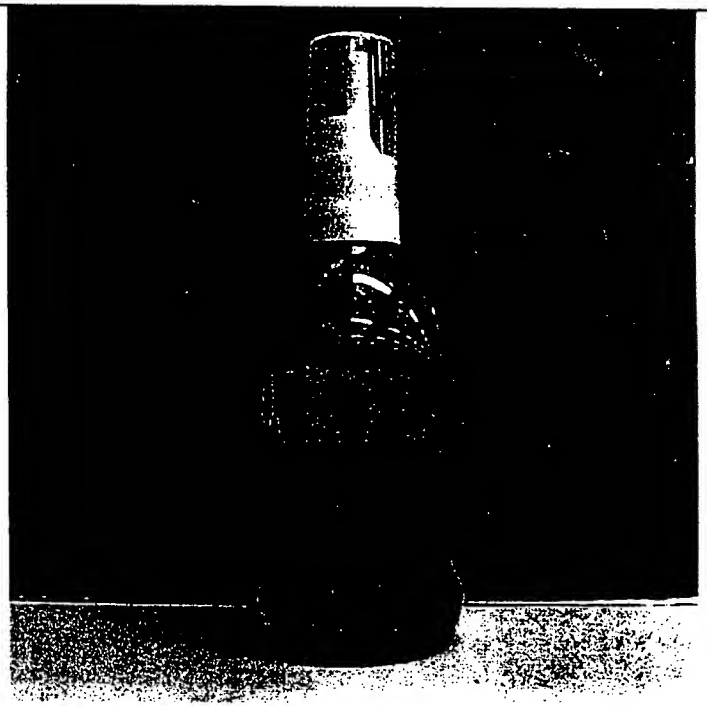
Key Strengths & Skills

Administration - Competent
Budget Preparation - Competent
Computer Literacy - Advanced
Human Resources - Basic
Intellectual Property - Competent
Marketing - Competent
Project Management - Expert
Regulatory Affairs - Competent

Other Key Strengths & Skills

Lateral thinker
Team Player
Commitment to quality, customer service and customer satisfaction
Ability to match theory with reality
Problem solving skills
Interpersonal skills
Chemical industry experience
Pharmaceutical industry experience
Aerosol product experience
OH&S Representative
Member of OH&S Committee
Member of Innovation Management Team
Involvement in cGMP Manufacturing
Involvement in cGMP Clinical Trials
Preparation of Product Development Proposals
Mechanical aptitude
Common sense

Appearance of inventive and comparative aerosol foam examples

Inventive Foam (Connetics Australia)	Comparative Foam (Di Schiena Example 3(e))
	
Description: Clear and colorless single-phase liquid.	**Description:** Two-phase mixture; comprising a brown, opaque liquid beneath a dark-brown clear liquid.

Shear rate versus Sample Temperature, E182/7/1-4, Constant Shear Stress 5 Pa